IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

1. (currently amended) Non-human transgenic animal~~, being transgenic for~~ having altered melusin expression.

2. (original) Non-human transgenic animal according to claim 1, characterized in that said altered melusin expression is performed by stable or transient modification of melusin expression at transcriptional, translational or post-translational level.

3. (previously presented) Non-human transgenic animal according to claim 1, characterized in that said altered melusin expression is an inactivation of melusin gene.

4. (currently amended) Non-human transgenic animal according to claim 3, characterized in that said gene inactivation is performed by a genetic approach ~~approaches~~.

5. (currently amended) Non-human transgenic animal according to claim 4, characterized in that said genetic approach is ~~approaches are~~ selected from the group consisting of homologous recombination, antisense RNA or DNA, and RNA or DNA interference ~~approach~~.

6. (previously presented) Non-human transgenic animal according to claim 1, characterized in that said animal is a melusin-null transgenic animal.

7. (previously presented) Non-human transgenic animal according to claim 1, characterized in that said animal is subjected to hypertensive condition.

8. (original) Non-human transgenic animal according to claim 7, characterized in that said hypertensive condition is determined by surgical operation.

9. (original) Non-human transgenic animal according to claim 8, characterized in that said surgical operation consists in surgical constriction of the transverse aorta.

10. (original) Non-human transgenic animal according to claim 7, characterized in that said hypertensive condition is determined by pharmacological treatment, preferably with hypertensive drugs.

11. (original) Non-human transgenic animal according to claim 7, characterized in that said hypertensive condition is determined by high sodium diet.

12. (currently amended) Non-human transgenic animal according to claim 1, wherein said animal develops ~~develop~~ at least impaired heart hypertrophy.

13. (currently amended) Non-human transgenic animal according to claim 1, wherein said animal develops ~~develop~~ at least heart dilation.

14. (currently amended) Non-human transgenic animal according to claim 1, wherein said animal develops ~~develop~~ at least heart failure.

15. (currently amended) Non-human transgenic animal according to claim 1, wherein said animal is a mammal ~~mammalian~~.

16. (currently amended) Non-human transgenic animal according to claim 15, wherein the mammal is a mouse ~~mammalian belongs to the murine genus (mus musculus)~~.

17. (original) Non-human transgenic animal according to claim 16, wherein said mouse belongs to the 129SV, C57Bl or 129SVxC57Bl strain.

18. (currently amended) Method of using a ~~Use of~~ non-human transgenic animal according to claim 1, comprising administering compounds to said animal and selecting a compound that is ~~for the selection of compounds~~ pharmacologically active in the prevention and/or treatment of heart failure.

19. (currently amended) Method of using a ~~Use of~~ non-human transgenic animal according to claim 1, comprising studying a heart pathology in said animal ~~for the study of heart pathologies~~, wherein said heart pathology is ~~pathologies are~~ selected from the group consisting of: heart failure, congestive heart failure, dilated cardiomyopathy, hypertensive cardiomyopathy, hypertrophic cardiomyopathy, and heart infarct.

20. (previously presented) Cells derivable from the non-human transgenic animal according to claim 1 and having altered melusin expression.

21. (original) Cells according to claim 20, characterized in that said cells carry a mutation inactivating melusin gene.

22. (previously presented) Cells according to claim 20, characterized in that said cells are lacking melusin expression.

23. (currently amended) Method of using ~~Use of~~ cells according to claim 20, comprising screening compounds against said cells for a compound that is ~~for the selection of compounds~~ pharmacologically active in the prevention and/or treatment of heart failure.

24. (original) Method for the preparation of a non-human transgenic animal according to claim 1 comprising essentially the steps of:

i) preparing a non-human transgenic parent animal carrying an inactivated melusin allele;

ii) breeding the parent transgenic animal with a non transgenic animal;

iii) selecting transgenic animals heterogyzote for the melusin gene mutation.

25. (original) Method according to claim 24, further comprising the step of iv) breeding the heterozygote transgenic animals to select homozygote transgenic animals for the melusin gene mutation.

26. (original) Non-human animals in which melusin function has been inhibited by the use of natural or synthetic compounds.

27. (currently amended) Method of using an ~~Use of the~~ animal according to claim 26, comprising studying ~~to study the~~ impaired cardiac hypertrophy in said animal.

28. (currently amended) Method of using an ~~Use of the~~ animal according to claim 26, comprising studying ~~to study~~ cardiac dilation in said animal.

29. (currently amended) Method of using an ~~Use of the~~ animal according to claim 26, comprising studying ~~to study the~~ heart failure in said animal.

30. (original) Method for screening compounds able to interact with melusin binding proteins, said compounds being pharmacologically active in the prevention and/or treatment of heart failure, wherein said method comprises using melusin, fragments and/or derivatives thereof.

31. (original) Method for screening compounds able to interact with melusin, said compounds being melusin agonists and pharmacologically active in the prevention and/or treatment of heart failure, wherein said method comprises using melusin, fragments and/or derivatives thereof.

32. (currently amended) Method of using ~~Use of~~ melusin, fragments and/or derivatives thereof for ~~the manufacture of a medicament for the~~ prevention and/or treatment of

heart failure, comprising administering a pharmaceutical composition comprised of said melusin, a fragment and/or a derivative thereof to human or animal.

33. (currently amended) Method of using ~~Use of~~ melusin, fragments and/or derivatives thereof ~~for the screening of compounds pharmacologically active~~ for the prevention and/or treatment of heart failure, comprising screening melusin, a fragment and/or a derivative thereof for pharmacologic activity.

34. (currently amended) Method ~~Use~~ according to claim 33, characterized in that said pharmacologically active compound is a melusin agonist.

35. (currently amended) Method ~~Use~~ according to claim 33, characterized in that said pharmacologically active compound is able to interact with melusin-binding proteins.

36. (currently amended) Method of using ~~Use of~~ a DNA vector for ~~the manufacture of a medicament for use in the~~ prevention and/or treatment of heart failure, comprising administering a pharmaceutical composition comprised of said DNA vector to human or animal, characterized in that said vector is comprised of ~~comprising~~ a transgene coding for the melusin protein or fragments thereof and expressing said transgene in the myocardium.

37. (currently amended) Method ~~Use~~ according to claim 36, characterized in that said transgene comprises melusin cDNA or fragments thereof.

38. (currently amended) Method ~~Use~~ according to claim 36, characterized in that said vector is an adenoviral vector or a lentiviral vector.

39. (original) Pharmaceutical compositions comprising melusin, fragments and/or derivatives thereof for the prevention and/or treatment of heart failure.